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EDG Data Set Name

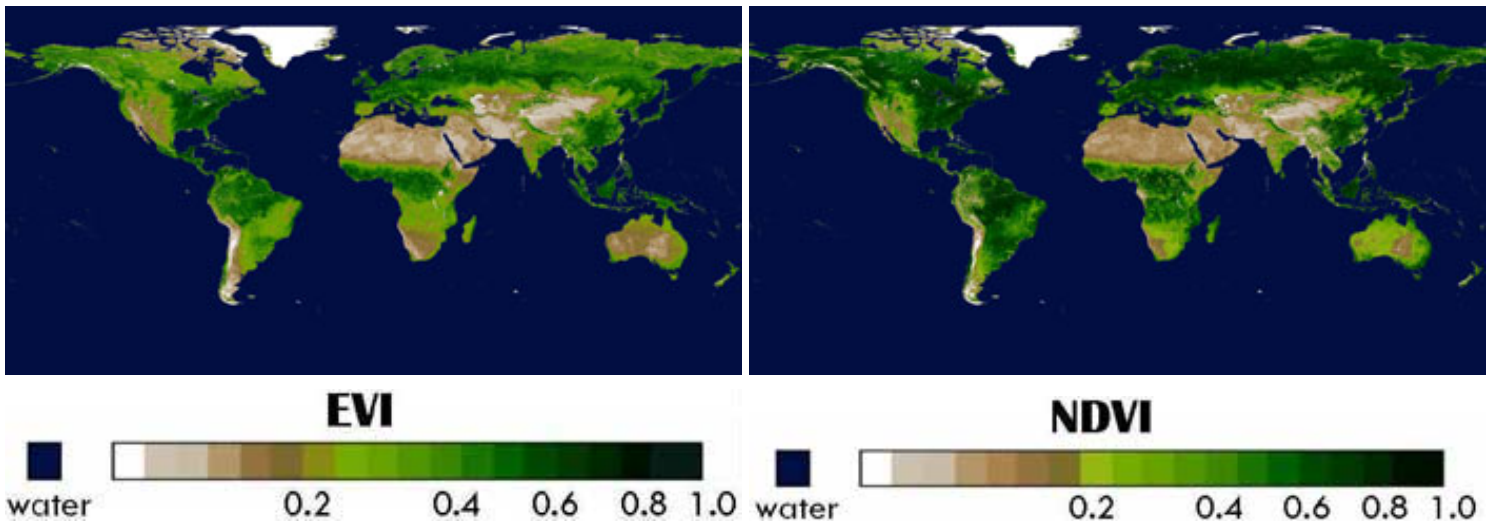
MODIS/Aqua Vegetation Indices 16-Day L3 Global 0.05Deg CMG

Granule Shortname

MYD13C1

Version	Acquisition Range	Science Quality Status
V004	July 4 2002 (2002185)	Provisional

MODIS Level 3 16 day Global VI CMG product, June 26 2002



Data Set Characteristics

Image Dimensions = 2 (3600x7200 row/column)

Average File Size = 728 MB

Resolution = 0.05 degree (5600m at equator)

Projection = Latitude/Longitude

Data Format = HDF-EOS

Science Data Sets (SDSs) = 15

Product Description

The MYD13C1 image shown is a sample of the MODIS Level 3 16-day composite of Vegetation Indices at 0.05° resolution (~6km x 6km nominal resolution) that has been pseudo-colored. This product uses, as input, the 1km 16 days MODIS Vegetation Index products (MYD13A2 tiles). All available 16 day MODIS VI product tiles, that cover the earth's land surface for that 16 day period are stitched, projected and resampled to produce a global Lat-Lon VI map at 0.05°.

A spatial projection/averaging scheme is used to generate the monthly product. The actual CMG NDVI/EVI are generated from the input surface reflectances, that were resampled and reprojected, rather than from the input NDVI/EVI.

Two vegetation index (VI) algorithms are produced globally for land. One is the standard normalized difference vegetation index (NDVI), which is referred to as the "continuity index" to the existing NOAA-AVHRR derived NDVI. The other is an 'enhanced' vegetation index with improved sensitivity into high biomass regions and improved vegetation monitoring through a de-coupling of the canopy background signal and a reduction in atmosphere influences. The two

VIs compliment each other in global vegetation studies and improve upon the extraction of canopy biophysical parameters. The gridded vegetation indices include quality assurance (QA) flags with statistical data that indicate the quality of the VI product and input data. Due to their simplicity, ease of application, and widespread familiarity, vegetation indices have a wide range of usage within the user community. Some of the more common applications may include global biogeochemical and hydrologic modeling, agricultural monitoring and forecasting, land-use planning, land cover characterization, and land cover change detection.

NOTE: These products are still experimental in nature upon their initial release. Investigations are underway to assess the scientific validity of these products.

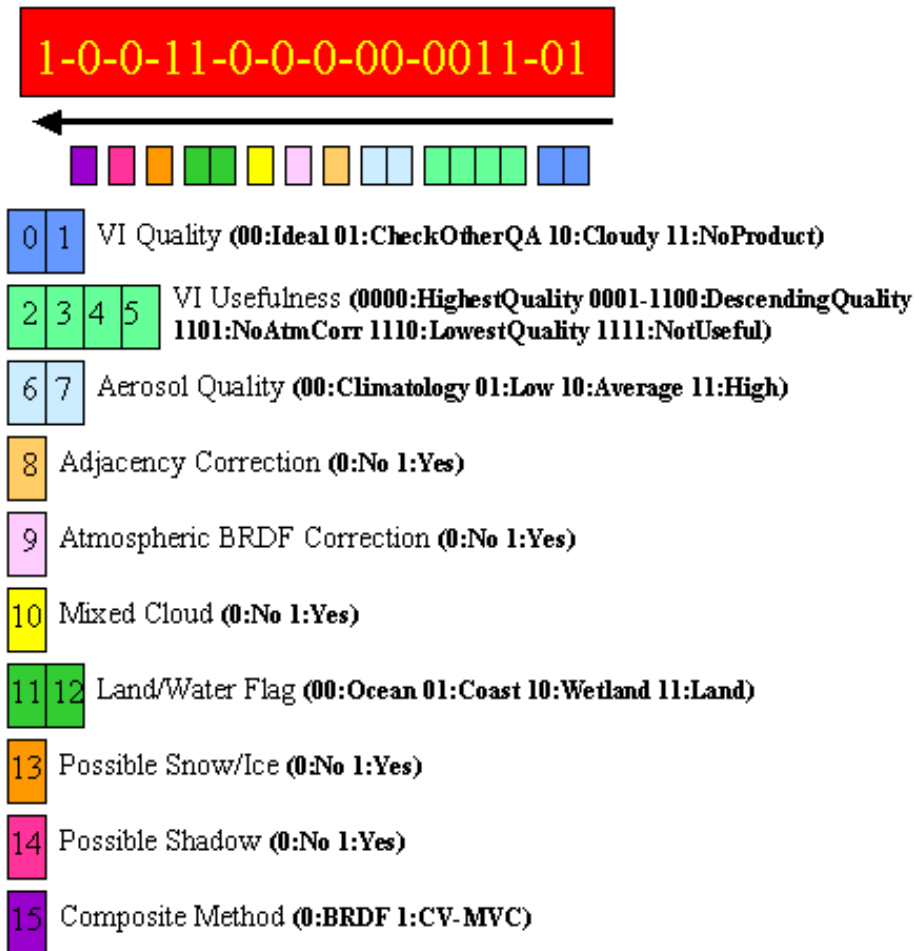
Each VI product contains 15 parameters, listed below:

SDS	Units	Data Type-bit	Fill Value	Valid Range	Divide by SCALE FACTOR
CMG 0.05° 16 days NDVI	NDVI	16-bit signed integer	-3000	-2000 - 10000	10000
CMG 0.05° 16 days EVI	EVI	16-bit signed integer	-3000	-2000 - 10000	10000
CMG *0.05° 16 days NDVI Quality	bit field	16-bit unsigned integer	65535	0 - 65535	na
CMG *0.05° 16 days EVI Quality	bit field	16-bit unsigned integer	65535	0 - 65535	na
CMG 0.05° 16 days red reflectance MODIS Band # 1, 620 - 670 nm	reflectance	16-bit signed integer	-1000	0 - 10000	10000
CMG 0.05° 16 days NIR reflectance MODIS Band # 2, 841- 876 nm	reflectance	16-bit signed integer	-1000	0 - 10000	10000
CMG 0.05° 16 days blue reflectance MODIS Band # 3, 459 - 479 nm	reflectance	16-bit signed integer	-1000	0 - 10000	10000
CMG 0.05° 16 days MIR reflectance MODIS Band # 7, 2105- 2155 nm	reflectance	16-bit signed integer	-1000	0 - 10000	10000
CMG 0.05° 16 days average view zenith angle Average View zenith of input 1km pixels	degree	16-bit signed integer	-10000	-9000 - 9000	100
CMG0.05° 16 days average sun zenith angle Average View zenith of input 1km pixels	degree	16-bit signed integer	-10000	-9000 - 9000	100
CMG 0.05° 16 days Average View zenith of input 1km pixels	degree	16-bit signed integer	-4000	-3600 - 3600	10
CMG 0.05° 16 days NDVI standard deviation Based on the input pixels	NDVI	16-bit signed integer	-3000	-2000 - 10000	10000
CMG 0.05° 16 days EVI standard deviation Based on the input pixels	EVI	16-bit signed integer	-3000	-2000 - 10000	10000
CMG 0.05° 16 days Percent cloud cover Based on the input pixels	%	8-bit unsigned integer	255	0 - 100	1

¹ CMG 0.05° 16 days Percent with vegetation Based on the NDVI of all input pixels	%	8-bit unsigned integer	255	0 - 100	1
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¹**The Percent with vegetation SDS** is a simple statistical measure that counts the number of pixel with NDVI above a preset threshold (0.10). Consequently it is very sensitive to snow/ice and cloud, and only represents an apparent value of percent vegetation. However, when conditions are clear, this parameters is very useful in indicating the percent of input pixel with vegetation compared to the threshold of 0.1

MODIS VI QA bit layout



*Quality Control Bit Index

Bit	Description
0-1	NDVI quality
	00 NDVI produced, good quality;
	01 NDVI produced, but check QA
	10 produced but most likely cloudy pixel
	11 pixel not produced due to other reasons than clouds

2-5	VI usefulness four bit range 0= highest quality
	13 no atmospheric correction performed
	14 quality too low to be useful
	15 not useful for any other reason
6-7	aerosol quantity:
	00 climatology
	01 low
	10 average
	11 high
8	1 yes adjacency correction performed
	0 no adjacency correction performed
9	1 yes atmosphere BRDF correction performed
	0 no atmosphere BRDF correction performed
10	1 yes mixed clouds
	0 no mixed clouds
11-12	land/water flag
	00 ocean
	01 coast
	10 wetland
	11 land
13	1 yes possible snow/ice
	0 no possible snow/ice
14	1 yes possible shadow
	0 no possible shadow
15	composite method for NDVI
	0 BRDF model based nadir equivalent VI
	1 CVMVC (constraint view angle maximum value VI)

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(<http://edcimswww.cr.usgs.gov/pub/imswelcome/>)

EOS Data Gateway Search Tips

Source: Aqua
Sensor: MODIS

Dataset: MODIS/Aqua Vegetation Indices 16-Day L3 Global 0.05Deg CMG
Spatial: HORIZONTALTILENUMBER Max/Min VERTICALTILENUMBER Max/Min
Geographic Extent: Global
Temporal Extent: 2002-07-04 to present (V004)

Product Information

[Product Description](#)

(<http://modis-land.gsfc.nasa.gov/products/products.asp?ProdFamID=6>)

[User Guide](#)

(http://tbrs.arizona.edu/project/MODIS/UserGuide_doc.php)

[More Info on MODIS VI](#)

<http://tbrs.arizona.edu/cdrom/Index.html>

[Algorithm Theoretical Basis Document \(ATBD\)](#)

(http://modis.gsfc.nasa.gov/data/atbd/land_atbd.html)

[MODIS Standard Data Products Catalog](#)

(<http://modis.gsfc.nasa.gov/data/dataproducts.html>)

[EOS Data Products Handbook Volume 2 \(2000\)](#)

(http://eospsos.gsfc.nasa.gov/eos_homepage/for_scientists/data_products/vol2.php)

Contact Information

[LP DAAC User Services](#)

U.S. Geological Survey

EROS Data Center

47914 252nd Street

Sioux Falls, SD 57198-0001

Phone: 605-594-6116

Toll Free: 866-573-3222

866-LPE-DAAC

Fax: 605-594-6963

Email: edc@eos.nasa.gov

Web: <http://LPDAAC.usgs.gov>

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URL: <http://LPDAAC.usgs.gov/modis/myd13c1v4.asp>

Technical Contact: edc@eos.nasa.gov

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